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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,373	12/12/2001	Yung S. Cha	223	2806

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EXAMINER	
NGUYEN, DANNY	
ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/015,373	CHA, YUNG S.	
	Examiner	Art Unit	
	Danny Nguyen	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-24* is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 18-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation "a secondary coil" at line 5 and "a control coil at line16, but in the specification, page 17, line 13, describes a secondary coil or control coil is the same. Thus, there is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Onishi et al (USPN 5,475,560).

Regarding to claims 1, 2, Onishi et al disclose a superconducting current controller for controlling the current in a primary circuit (such as fig. 2) comprises a primary coil (2) coupled to the primary circuit (such as circuit 8 shown in fig. 4) and carrying a first current for generating a first magnetic flux (see col. 2, lines 40-43), a

super-conducting tube (tubular super-conductor 1) magnetically coupled to the primary coil (2) and carrying a second current induced by the first current, the second current producing a magnetic flux opposing to substantially cancel the first magnetic flux when the first current is within a pre-determined range (col. 2, lines 43-49), a secondary winding (3) magnetically coupled to the primary coil and the super-conducting tube (1), a variable impedance (4) coupled to the secondary coil (3), when the first current increases beyond a predetermined range, the second magnetic flux does not completely cancelled the first magnetic flux, thereby inducing a current into a secondary coil (col. 3, lines 42-56),

Regarding claim 3, Onishi et al disclose a ferromagnetic core (5), the primary coil (2) and secondary coil (3) wound about the ferromagnetic core (5) and the super-conducting tube (1) extending about the core.

Regarding to claim 4, Onishi et al disclose the ferromagnetic core (ring-shaped magnetic member 5) forms a closed loop (see fig. 2).

Regarding to claim 5, Onishi et al disclose the primary coil (2) extends exterior of the super-conducting tube (1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber et al (USPN 5,241,447) in view of Onishi et al.

Regarding to claims 1, 2, Barber et al disclose a superconducting current controller for controlling the current in a primary circuit (such as fig. 5) comprises a primary coil (96) coupled to the primary circuit (such as 99) and carrying a first current for generating a first magnetic flux (see col. 6, lines 1-3), a super-conducting tube (98) magnetically coupled to the primary coil (96) and carrying a second current induced by the first current, the second current producing a magnetic flux opposing to substantially cancel the first magnetic flux when the first current is within a pre-determined range (col. 6, lines 4-10), a secondary winding (92) magnetically coupled to the primary coil and the super-conducting tube (98), when the first current increases beyond a predetermined range, the second magnetic flux does not completely cancelled the first magnetic flux, thereby inducing a current into a secondary coil (col. 2, lines 12-13 and lines 49-53). Barber et al. do not disclose a variable impedance as claimed. Onishi et al disclose a variable impedance (4 shown in fig. 1). It would have been obvious to one having skill in the art to modify the circuit of Barber et al. with a variable impedance as taught by Onishi et al in order to prevent a fault current occurring in primary coil (Onishi et al, col. 4, lines 45-48).

Regarding claim 3, Barber et al disclose a ferromagnetic core (90), the primary coil (96) and secondary coil (92) wound about the ferromagnetic core (90) and the super-conducting tube (98) extending about the core.

Regarding to claim 4, Barber et al disclose the ferromagnetic core (90) forms a closed loop (see fig. 5).

Regarding to claims 6, 7, Barber et al disclose the super-conducting tube consists a single coil and comprises a plurality of rings arranged side by side to form a tube (see fig. 5).

Regarding to claim 5, Barber et al disclose the primary coil (96) extends exterior of the super-conducting tube (98).

Regarding to claim 8, Barber et al disclose the core (90) has first, second, and third sections, the primary coil (96) formed about the first second, the secondary coil (92) formed about the second section, and the super-conducting tube (98) formed about the third section of the core (90) (see fig. 5).

Allowable Subject Matter

4. Claims 10-24 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 10 and 18 recite a super-conducting current controller for controlling the current in a primary circuit comprises a variable current source coupled in circuit with the control coil to generate a second current in the control coil such that the control coil generates a second magnetic flux in a direction additive to the first magnetic flux.

The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

5. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 9 recites a super-conducting current controller for controlling the current in a primary circuit comprises a variable current source coupled in circuit with the control coil to generate a second current in the control coil such that the control coil generates a second magnetic flux in a direction additive to the first magnetic flux.

The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Joo et al (USPN 5,930,095), Mumford (USPN 5,694,279), Havens et al (USPN 6,014,069), and Mouri et al (USPN 4,987,390) disclose various super-conductive fault current limiter protect circuits due to over-current event.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (703)-305-5988. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (703)-308-3119. The fax phone numbers

for the organization where this application or proceeding is assigned are (703)-872-9318 for regular communications and (703)-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

DN

DN
August 26, 2003

GREGORY J. TOATLEY, JR.
PRIMARY EXAMINER